

EXHIBIT B

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

AMANDA HILL and GAYLE HYDE,
individually and on Behalf of All Others
Similarly Situated,

Plaintiffs,

v.

QUICKEN LOANS INC.,

Defendant.

Case No. 5:19-cv-00163-FMO-SP

**EXPERT REPORT OF PHILIP
GREENSPUN, Ph.D.**

1. I have been retained by counsel for Quicken Loans Inc. in the above-captioned litigation as an expert witness to respond to the January 17, 2020 report submitted by Alexander Young on behalf of Plaintiff Amanda Hill (the “Young Report”). I have also been asked to testify as a rebuttal expert witness at the February 28, 2020 evidentiary hearing in this matter. I understand that the Court requested that the parties present evidence at the hearing regarding (1) “whether Amanda Hill clicked a button entitled ‘See my results!’ on any website affiliated with [Quicken Loans]” and (2) “whether notice of the websites’ terms of use were conspicuously visible next to the ‘See my results!’ button.” Oct. 17, 2019 Order, ECF No. 54. I hold the opinions expressed herein, and I am prepared to testify as to those opinions at the hearing, and as otherwise may be necessary.

2. I have reviewed and respond below to Mr. Young’s opinions concerning (1) whether Hill clicked the submission buttons on the LMB.YourVASurvey.info or LowerMyBills.com websites, (2) whether Hill saw or could have seen the Terms of Use hyperlink when she visited the LMB.YourVASurvey.info and LowerMyBills.com websites, and (3) best practices for website design and user experience for disclosing to a user the terms and conditions that the user agrees to when submitting a web form.

3. I have reviewed and considered the materials identified in Exhibit 3 in forming my opinions. I am an employee of Fifth Chance Media LLC, which I understand is being compensated \$475 per hour for my work on this matter.

4. I reserve the right to offer additional opinions and to amend this Report subject to additional information I may receive or that may be presented in this matter.

I. SUMMARY OF OPINIONS

5. Based on my own experience and expertise, including as an academic teaching in the field of webpage design, and in light of the user interface conventions established by market leaders in e-commerce and web publishing in general, and after reviewing the same server-gathered information that Mr. Young relied on, it is my opinion that the “Terms of Use” hyperlink on the LMB.YourVASurvey.info website was (1) actually visible to Ms. Hill and (2) located where a typical user interested in terms and conditions would be most likely to look for them.

6. In my opinion, the “Terms of Use” hyperlink was visible to Ms. Hill when she visited LMB.YourVASurvey.info. Mr. Young in fact shows in Young Exhibit N, that the “Terms of Use” hyperlink was visible to Ms. Hill when she visited LMB.YourVASurvey.info as a result of her entering her contact information. Mr. Young’s conclusion that, nonetheless, Ms. Hill did not have “any reasonable opportunity to see the Terms of Use link” on the LMB.YourVASurvey.info website is flawed. He states that, though the Terms of Use link was actually displayed to Ms. Hill while she was on the site, she lacked a “reasonable opportunity” to view that link because, as a result of Ms. Hill’s own browsing and form entry behavior, it was visible for “one second.” Because Ms. Hill controlled how long the link was visible to her, it is not logical for Mr. Young to conclude she lacked a “reasonable opportunity” to view the link. Mr. Young also does not identify any studies or industry standards about the minimum on-screen time that should be required for a user to notice something that would support his conclusion. Mr. Young’s opinion is in fact contradicted by (1) industry standards finding that a viewer has had “opportunity to view” an advertisement visible for one second on a mobile website, and (2) research concluding that people are able to perceive the overall structure of a webpage within

50 milliseconds (1/20th of a second) and that substantial visual processing can be done on an image in only 13 milliseconds.

7. It also my opinion Ms. Hill had an opportunity to see the “Terms of Use” link for both the LMB.YourVASurvey.info and LowerMyBills.com websites, including the arbitration clause contained therein, because the webpages’ terms and conditions were visible to Ms. Hill and located adjacent to the submission buttons. At the time that Ms. Hill visited these websites, placing terms and conditions, or links to terms and conditions (including to legal terms and arbitration clauses), in a smaller font at the bottom of a webpage had been an established user interface convention for more than 20 years. Thus, LMB.YourVASurvey.info and LowerMyBills.com put these terms and conditions exactly where a consumer such as Ms. Hill would expect to find them. Furthermore, for both websites, Mr. Young shows that sufficient portions of the terms and conditions the user is agreeing to are shown to the user when the webpage first loads (Young Exhibits K and Q). Mr. Young’s exhibits are consistent with each of the video captures of Ms. Hill’s visit to the websites by third-party compliance vendors. Mr. Young’s re-creation attempts and the videos—consistent with my own experience visiting both websites—show that enough of the terms and conditions appeared on Ms. Hill’s screen for her to know that she was agreeing to certain terms and conditions and that scrolling would reveal the full extent of those terms. This is a common experience that consumers and website users, particularly when users are on a mobile device, are accustomed to and have come to expect, and is consistent with market leaders in e-commerce and web publishing.

8. In my opinion, the “best practices” set forth in the Young Report are not agreed upon industry-wide. That Mr. Young is mistaken in his assertions is demonstrated by examples cited below from market leaders in various domains. Further, Mr. Young does not cite and I did

not find any research regarding consumer behavior to suggest that the outcome would have been different had the websites been designed with, for example, a checkbox or an alternative layout. Rather, studies show that website users, such as Ms. Hill, regularly scroll to the bottom of webpages, and users know and expect that terms and conditions (including hyperlinks) will appear at the bottom of webpages.

9. I do not agree with Mr. Young's conclusion that Ms. Hill did not click the "See my results!" button. I have looked at the LMB.YourVASurvey.info website using a similar method to that used by Mr. Young, i.e., examining how the current page is rendered when viewed via software that simulates an Android smartphone. I looked at the JavaScript code that is sent to the browser by the site and that is identified by Mr. Young. Unlike Mr. Young, however, I did this while monitoring network messages sent between the browser and any servers associated with the LMB.YourVASurvey.info website to assess when any servers were receiving information submitted on the form in relation to the when the "See my results!" button was clicked. I also visited the website myself and followed a similar form-entry procedure to what is shown in the recreation videos from the third-party compliance vendor Active Prospect, as did Mr. Young. As explained below the contact information entered on the final submission page for LMB.YourVASurvey.info is not sent to and retained by any server affiliated with the website until after the final "See my results!" submission button is clicked. This is contrary to Mr. Young's opinion, and consistent with the Supplemental Declaration of Mitchell Viner (ECF 44-1) and Quicken Loans' position that Ms. Hill's contact information would not have been collected by the LMB.YourVASurvey.info website absent clicking the "See my results!" button. I also reviewed the source code for the website as it existed in October of 2018 when Ms. Hill visited the

LMB.YourVASurvey.info website. That 2018 source code also does not support Mr. Young's conclusion that Ms. Hill did not click on the "See my results!" button.

10. It is also my opinion that Mr. Young's conclusion that Ms. Hill did not click the "See my results!" button because the Active Prospect video showing Ms. Hill's interaction with the website does not display a "Thank You" page is not supported. Active Prospect explains on its website that, with a conventional form such as that used by LMB.YourVASurvey.info, its video re-creation script stops recording when the final submission button is pressed by the user, which is also confirmed by viewing the JavaScript code and network messaging on the LMB.YourVASurvey.info website. Therefore, the absence of a "Thank You" page in the Active Prospect video does not support Mr. Young's conclusion that Ms. Hill did not click the "See my results!" button.

II. QUALIFICATIONS

11. My experience and qualifications are summarized in my *curriculum vitae*, a copy of which is provided as Exhibit 1. The following is a brief summary of my relevant qualifications and professional experience.

12. I hold a Ph.D. in Electrical Engineering and Computer Science from the Massachusetts Institute of Technology ("MIT") (awarded in 1999). My thesis concerned the engineering of large online Internet communities with a web browser front-end and a relational database management system (RDBMS) containing site content and user data.

13. I also obtained a Bachelor of Science Degree in Mathematics from MIT in 1982 and a Master of Science Degree in Electrical Engineering and Computer Science from MIT in 1993.

14. I have authored five computer science textbooks, including *Database Backed Web Sites* (Macmillan), *Software Engineering for Internet Applications*, and a SQL language tutorial. All of these textbooks describe methods for implementing information systems accessed via a web browser. *Software Engineering for Internet Applications* includes several chapters on delivering web services to users on mobile devices, such as cellular telephones.

15. I have over 40 years of experience in computer programming, software, and web design. I began working full-time as a computer programmer in 1978, developing a database management system for the Pioneer Venus Orbiter at the National Aeronautics and Space Administration's Goddard Space Flight Center.

16. My experience with designing user interfaces for webpages designed to be viewed by consumers goes back to 1994, when I built various small electronic commerce services. I have designed, among other things, a client/server application to allow doctors and nurses at Boston Children's Hospital to access medical records and an infrastructure for Internet applications across all of Hearst Corporation's newspaper, magazine, radio, and television properties, including software that collected consumer contact and credit card information.

17. Between 1995 and 1997, I began distributing a free open-source toolkit, called ArsDigita Community System ("ACS"). In 1997, I started a company, ArsDigita, to provide support and service for ACS. As the founder, CEO, and chief technical employee of ArsDigita between 1997 and 2000, I supervised dozens of software development projects. Nearly all of those projects were Internet applications with a web front-end on a client device and an Oracle RDBMS back-end on a server. I personally developed functional specifications, SQL data models, and webpage flows that determined the user experience. For example, I specified and built the SQL data model for a module to manage downloading of software to registered users. I also reviewed a

module, initially developed in May 2000, to enable ACS to deliver content customized for delivery to wireless devices like cell phones.

18. Additionally, as a part-time teacher within the Department of Electrical Engineering and Computer Science at MIT, I have also taught students how to develop Internet applications, with an emphasis on trying to improve the user experience. Those courses concerned client/server applications and web protocols and standards, e.g., HTTP, HTML, and VoiceXML. I am also one of the creators and teachers of a three-day intensive course in developing database applications, which includes the development of client-side software for Android smartphones and server-side software for Linux/MySQL.

19. I have served as an expert witness in federal court cases for Amazon, Ford Motor Company, International Business Machines, Philips, Xerox, and Google. I have been retained as an expert witness in patent and software matters by the U.S. Department of Justice, the Commonwealth of Massachusetts, and the Federal Public Defender's Office. I have also testified before the U.S. Senate Commerce Committee and the Subcommittee on Patents, Copyrights and Trademarks of the Senate Judiciary Committee on my experience with technology and intellectual property.

III. BACKGROUND

A. ASSUMPTIONS

20. Mr. Young states that his report addresses "whether it is reasonable to assume that [Ms. Hill] would have seen the terms of use ('Terms of Use') link located on [LMB.YourVASurvey.info]." Mr. Young states that "[u]nderstanding which device is a vital step as different mobile devices have screens of different shapes and some may show more or less

content than others.”¹ Server logs from the records of LMB.YourVASurvey.info and LowerMyBills.com indicate that Ms. Hill used an HTC Pixel device.² Mr. Young relies on these records to conclude Ms. Hill used an HTC Pixel device, and correspondingly so do I. Young Report at 4.

21. Mr. Young likewise implicitly assumes that the LMB.YourVASurvey.info website appears and functions today as it did in October 2018, when Ms. Hill visited the website. Based on my review of the available evidence, including the source code for the LMB.YourVASurvey.info website as it appeared in October 2018, I do not have reason to believe that the website appeared or functioned differently at that time, such that it would impact my opinions.³

B. WEBSITES VISITED BY MS. HILL

22. I understand from the Motion to Compel Arbitration that there are two websites at issue in this litigation: (1) the LMB.YourVASurvey.info website that Ms. Hill visited in October 2018, and (2) the LowerMyBills.com website that Ms. Hill visited in November 2018.⁴ Mr. Young uses the undefined term “Webpage” throughout his report (e.g., Young Report at 3). It appears that he intends the term “Webpage” to refer to LMB.YourVASurvey.info, although he sometimes uses the same term to refer to a third, different website—YourVASurvey.info (e.g., Young Report at 6-7 and Young Exhibits D-I)—which I understand is not at issue in this case. Although my understanding is that the pages LMB.YourVASurvey.info and YourVASurvey.info were

¹ Young Report at 4.

² Plaintiff’s Proposed Exhibit 12 (“Hill All Customer Inquiry Data”).

³ See Exhibit 9.

⁴ ECF No. 29-1.

published by the same company (Suited Connector), they are different pages that contain different HTML.⁵ As such, to the extent Mr. Young's opinions concern YourVASurvey.info, they are not relevant to understanding Ms. Hill's experience and so I do not respond to them.⁶

23. To avoid further confusion, I present here a brief discussion of the websites, software and servers at issue—and how they worked during each of Ms. Hill's visits.

24. On October 10, 2018, Ms. Hill visited LMB.YourVASurvey.info, a website operated by Suited Connector.⁷ Ms. Hill's interaction with the LMB.YourVASurvey.info site was automatically recorded by two third-party compliance services, one ("Jornaya") operated by Lead Intelligence, Inc. and one ("Trusted Form") operated by Active Prospect.⁸ After Ms. Hill clicked the "See my results!" submission button on the LMB.YourVASurvey.info site, the information typed by Ms. Hill during this visit (her name, phone number and other contact information) was sent to and entered into a database associated with Suited Connector.⁹

25. Later, on November 12, 2018, Ms. Hill visited the LowerMyBills.com, a website that is unrelated in terms of ownership, programming, and operation to the

⁵ Compare LMB.YourVASurvey.info with YourVASurvey.info; Feb. 10, 2020 Interview with Larry Smith, Chief Technology Officer of Suited Connector.

⁶ Specifically, I do not address the Young Report's discussion of that website, including his "Approach one – reconstruction" (Young Report at 4-6) and Young Exhibits A-H. In the event this webpage somehow is relevant, I reserve the right to amend this report to address that part of Mr. Young's report.

⁷ ECF No. 29-5 at ¶ 17 (Viner Declaration); Plaintiff's Proposed Exhibit 12 ("Hill All Customer Inquiry Data"); Feb. 10, 2020 Interview with Larry Smith, Chief Technology Officer of Suited Connector.

⁸ Declaration of Manny Wald; Declaration of Steven M. Rafferty; Technical Appendix A at 1, 3, 5-9.

⁹ Technical Appendix A at 10-13; Feb. 10, 2020 Interview with Larry Smith, Chief Technology Officer of Suited Connector.

LMB.YourVASurvey.info site.¹⁰ LowerMyBills.com is operated by LMB Mortgage Services, Inc. (“LMB”).¹¹ LowerMyBills.com also uses the Jornaya compliance service.¹²

C. HOW THE WEBSITES VISITED BY MS. HILL WORKED

26. As a general matter, a Web browser receives information from a web server. That information is typically received as a combination of HyperText Markup Language (“HTML”), Cascading Style Sheets (“CSS”), and JavaScript. The HTML can contain one or more pages of text as well as instructions for how to render the text (for example, to display certain text as bold or italicized). The CSS provides more sophisticated formatting capabilities. JavaScript is a computer programming language containing instructions that will run inside the browser, for example, to record user activity and send it to a third-party server for compliance monitoring.

27. Through the mid-1990s, clicking “Next” or “Submit” on a multi-page website would almost always result in the browser loading a new HTML file from the server to display the next page. When the new HTML file was loaded, it would typically terminate any JavaScript programs associated with the prior page.

28. Starting around 2000, however, the “single-page application” became popular. In a single-page application, a multi-part form can present what *looks like* multiple screens to a user without having to go back to the server to store or retrieve any of the data input by the user. Rather, a JavaScript program runs continuously as the user fills out the form.

29. LMB.YourVASurvey.info and LowerMyBills.com each load an index page that presents a series of survey questions (presented to the user on a series of “cards”). The final “card”

¹⁰ ECF No. 29-5 at ¶ 2 (Viner Declaration); Feb. 10, 2020 Interview with Larry Smith, Chief Technology Officer of Suited Connector.

¹¹ ECF No. 29-5 at ¶ 2 (Viner Declaration).

¹² Wald Declaration.

includes a submission button (labeled, on LMB.YourVASurvey.info, with the text “See my results!”). I refer to this final “card” as the “submission page.” After a user clicks the submission button, these cards are followed by a “Thank You” page confirming the user’s submission.

30. The LMB.YourVASurvey.info site was a single-page application, *except for* the final Thank You page. Thus, a JavaScript program running within the main LMB.YourVASurvey.info single-page application would be terminated by the user clicking the “See my results!” button (and a video reconstruction based on data from that JavaScript code would similarly be terminated at that point). When a user proceeds to the Thank You page, the JavaScript referenced by the index page terminates and a new HTML page is loaded by the browser, along with any JavaScript programs referenced by the new HTML page.

31. By contrast, the LowerMyBills.com site was a single-page application, *including* the final Thank You page. Thus, a JavaScript program running within the main LowerMyBills.com single-page application would not be terminated by the user clicking the submission button (and a video reconstruction based on data from that JavaScript would also not be terminated at that point). The Thank You page is part of the same HTML page as the survey cards.

32. Technical Appendix A, attached to this report, provides additional detail about how the LMB.YourVASurvey.info website functioned at a technical level.

IV. THE “TERMS OF USE” WERE VISIBLE TO MS. HILL WHEN SHE VISITED THE LMB.YOURVASUREVEY.INFO AND LOWERMYBILLS.COM WEBSITES.

33. I do not agree with Mr. Young’s opinions concerning whether the “Terms of Use” link was visible to Ms. Hill during her visits to the LMB.YourVASurvey.info and

LowerMyBills.com websites.¹³ Rather, it is my opinion that the “Terms of Use” link was visible to Ms. Hill at both websites. Mr. Young’s contrary opinions rest on a number of assumptions, many of which are not supported by the records and data concerning Ms. Hill’s visits to those websites. Nonetheless, the Young Report and my own testing and analysis confirm that those terms were visible to Ms. Hill when she visited the websites.

A. THE TERMS OF USE HYPERLINK WAS VISIBLE TO MS. HILL ON THE LMB.YOURVASURVEY.INFO WEBSITE.

34. Mr. Young opines (at 7) that “Hill was not offered any reasonable opportunity to see the Terms of Use link and know that she would be bound by the Terms of Use” at the LMB.YourVASurvey.info website. In my opinion, Mr. Young’s conclusion is wrong and contradicted by his own report.

35. At the outset, it is notable that Mr. Young does not dispute, and instead agrees, that the Terms of Use link on the LMB.YourVASurvey.info website was shown and visible to Ms. Hill near the “See my results!” button during her visit to the site as she was inputting her information.¹⁴ This stands in contrast to his opinion that the Terms of Use link was not visible on a different website (YourVASurvey.info) that, as I understand, is not at issue in the case.¹⁵ Nor does Mr. Young assert that the Terms of Use link was “not conspicuous,” which he contends with respect to the LowerMyBills.com website (at 8). Mr. Young’s opinion, therefore, concerns only the

¹³ E.g., Young Report at 6 (“I can conclude that the Terms of Use is not visible on the screenshot I took on the site on 12-12-19 (Exhibit E) and the Terms of Use would not be visible on the screenshot as provided by Defendant (Exhibit F) on the phone used by Hill during the October 2018 visit.”); *id.* at 7 (“I can conclude that Hill was not offered any reasonable opportunity to see the Terms of Use link and know that she would be bound by the Terms of Use.”).

¹⁴ Young Report at 7.

¹⁵ Young Report at 6.

amount of time the Terms of Use link was visible to Ms. Hill while she was on the LMB.YourVASurvey.info website.

36. Mr. Young states that he watched the Active Prospect video of Ms. Hill's user experience (submitted as Exhibit A to the Rafferty Declaration) and attempted to mimic that experience. As he explains—and consistent with my experience in using the website on a mobile device—when a user enters information on the submission page in each successive field (e.g., First Name, Last Name, Phone), “[t]here was scrolling of content that occurred as fields were being entered.”¹⁶ Mr. Young then confirms that, during the Active Prospect video and his own experience visiting the LMB.YourVASurvey website (which is again consistent with my same experience), “[t]he Terms of Use [hyperlink] is visible toward the bottom of the screen” as the form is being filled out.¹⁷ Mr. Young's opinion that Ms. Hill “was not offered any reasonable opportunity to see the Terms of Use link” is thus contradicted by Mr. Young's inclusion of a screen that he says would have been displayed to Ms. Hill and that does, in fact, show the link:

¹⁶ Young Report at 6.

¹⁷ Young Report at 7 and Young Exhibit N (reproduced below).

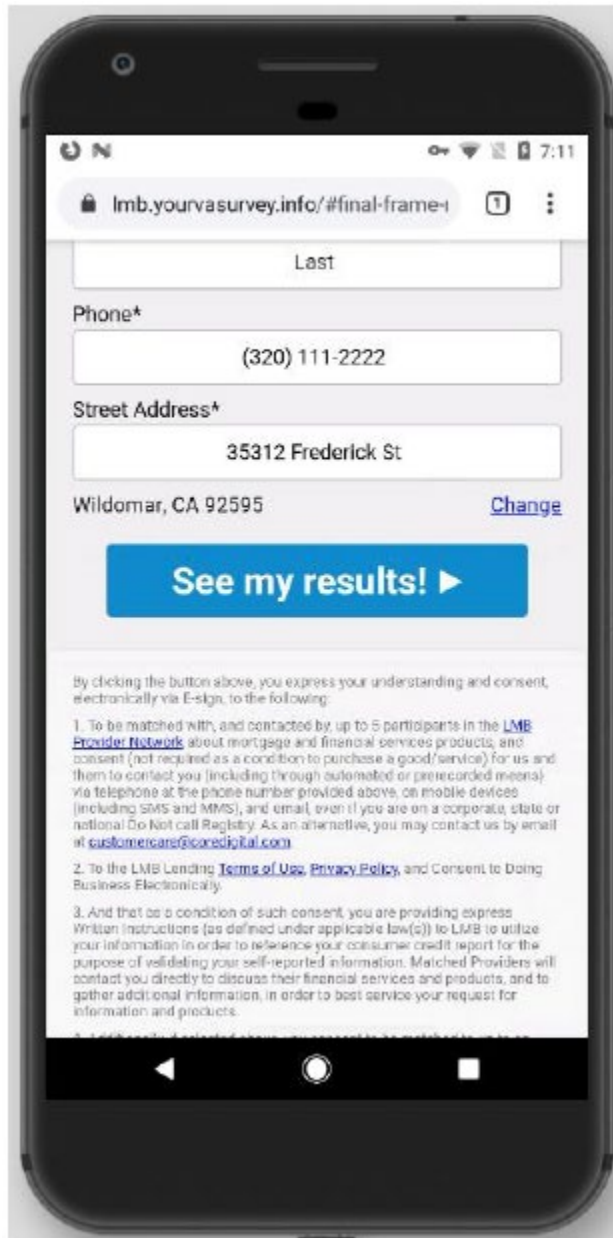


Image 1: Young Report Exhibit N

37. In trying to discount this critical fact, Mr. Young opines that because Ms. Hill “spen[t] one second” viewing the page in this position, she did not have a “reasonable opportunity” to view that link.¹⁸ But Mr. Young fails to address that the amount of time Ms. Hill spent on this

¹⁸ Young Report at 7.

view of the webpage, and how long the Terms of Use link was visible to her, was completely within Ms. Hill's control. Mr. Young in fact shows (at 7 and Young Exhibit P) that the one-second period for which the Terms of Use link was visible to Ms. Hill only ended because Ms. Hill "clicked the 'Change' link." Had she not clicked the "Change" link, or had she done nothing after the link became visible, or took another action that kept the link visible, she could have viewed the Terms of Use link for as long as she wanted.

38. In my opinion, Ms. Hill had a more than reasonable opportunity to view the link because she decided how long the link would be visible to her. Further, in my opinion, Mr. Young's attempt to assess Ms. Hill's opportunity to view the link only by reference to her own choices and actions is not reasonable. Doing so is the equivalent of opining that a page of a newspaper, magazine or book was not visible to a person who chooses to spend only one second on the page before turning to the next one.

39. Mr. Young also does not address whether the Terms of Use link was visible to Ms. Hill for longer than one second. As shown when comparing Young Report Exhibit M and Young Report Exhibit N, when the keyboard on a mobile device is minimized, the Terms of Use link becomes visible on the submission page. Mr. Young does not address anywhere whether Ms. Hill's interactions with the keyboard resulted in the Terms of Use link being visible for her for more than one second.

40. Even if Ms. Hill had not been in control of how long the Terms of Use link was visible to her (and she was), the one-second period cited by Mr. Young is sufficient for a user to recognize that link. This is because one second of visibility is a sufficiently long time for a typical

user to view a webpage, including for the user to recognize and identify the presence of associated hyperlinks and terms and conditions.¹⁹

B. THE DISCLOSURE LANGUAGE FOR THE LMB.YOURVASURVEY.INFO WEBSITE WAS VISIBLE TO MS. HILL.

41. Mr. Young's attempted re-creations of Ms. Hill's experience also undermine his conclusions about the visibility of the "Terms of Use" link. In each re-creation, one can see that the website disclosure language (the section of the page that begins, "By clicking the button above, you express...") is clearly visible to Ms. Hill as she progresses through the form, even without scrolling down.²⁰ Mr. Young's opinion also ignores generally-accepted user interface design practices described below (Section V), and rests on his flawed assumptions about user behavior.

42. As shown in Young Report Exhibits K and P, for the LMB.YourVASurvey.info website, all of the text under the final "See my results!" submission button is part of the site's "terms and conditions." In other words, those "terms and conditions" are not limited to only the "Terms of Use" hyperlink. In my opinion, it is not relevant whether the "Terms of Use" hyperlink itself was visible in a particular scrolling position for several reasons. If a user could see the disclosure (which begins, "By clicking the button above, you express..."), he or she would be aware that the full terms and conditions would be set forth in a combination of text and hyperlinked pages and that the user need only scroll down to see the full terms and links. This is how the

¹⁹ MRC Mobile Viewable Ad Impression Measurement Guidelines (June 28, 2016), *available at* <http://www.mediaratingcouncil.org/062816%20Mobile%20Viewable%20Guidelines%20Final.pdf> (Media Rating Council guidelines stating that a viewer has "opportunity to see" mobile web advertisements if viewable for "greater than or equal to one continuous second"); Lindgaard et al., Attention web designers: You have 50 milliseconds to make a good first impression! (2006) (people are able to perceive the overall structure of a webpage within 50 milliseconds); Potter et al., Detecting meaning in RSVP at 13 ms per picture (2014) (substantial visual processing can be done on an image in only 13 milliseconds).

²⁰ Young Exhibits K, N and P.

LMB.YourVASurvey website appeared to a user (such as Ms. Hill), and this experience is consistent with market-leading web services.²¹ On a smartphone mobile device, a user would only need to move a finger slightly on the page to make the full terms and links visible.

43. There are at least two additional visual indications to a mobile web user (such as Ms. Hill) that additional content is available on the LMB.YourVASurvey website. First, it is evident that the disclosure text will continue as one scrolls farther down on the page. The first clause of the disclosure terminates with a colon, indicating additional text. The next sentence begins with the number “1,” indicating that successively numbered paragraphs will follow below. Second, a mobile browser will generally display a scroll bar as soon as someone touches a scrollable screen. As discussed below (in Section V), server-gathered statistics show that mobile users continue to scroll past what is initially visible to view information “below the fold.” And, as Mr. Young acknowledges (at 10-11), Ms. Hill entered her information on the webform and interacted with the webpage, and so would have seen a scroll bar. Mr. Young does not explain why Ms. Hill would not have acted in conformity with this typical user experience, particularly in light of the visual cues presented to her.

C. THE DISCLOSURE LANGUAGE FOR THE LOWERMYBILLS.COM WEBSITE WAS VISIBLE TO MS. HILL.

44. Mr. Young briefly addresses the visibility of the Terms of Use on LowerMyBills.com (at 8). LowerMyBills.com is a different webpage, operated by a different company (and thus created by different programmers) than LMB.YourVASurvey.info.²²

45. Exhibit Q of the Young Report shows that, like LMB.YourVASurvey.info, the terms and conditions presented on LowerMyBills.com (beginning with “By clicking the button

²¹ *Infra*, Section V; Exhibits 4-7.

²² *Supra*, ¶ 25.

above, you express your understanding and consent ... to the following:”) are visible to any user who is preparing to touch the submit button (including Ms. Hill).

46. For the same reasons described above in Section IV.B, if a user could see this disclosure language, he or she would be aware that the full terms and conditions would be set forth in a combination of text and additional linked pages, and would likely continue to scroll to view that continued text. In my opinion, these terms were therefore visible to Ms. Hill when she visited LowerMyBills.com.

V. THE LMB.YOURVASURVEY.INFO AND LOWERMYBILLS.COM WEBSITES FOLLOW GENERALLY-ACCEPTED USER INTERFACE DESIGN PRINCIPLES AND COMMON INDUSTRY PRACTICES, WHICH ARE CONTRARY TO YOUNG’S PROFFERED BEST PRACTICES.

47. Mr. Young opines (without any cited support) that it is a “best practice” to implement a webpage design in which terms and conditions precede the submit button, are displayed in a larger font, and have an adjacent required checkbox.²³ But this opinion is contradicted by generally-accepted principles of user interface design, as well as the website design of market leaders, such as Amazon.com and Facebook.²⁴ This is also contradicted by the design of sites related to major consumer purchases, such as Toyota, Ford, Kelley Blue Book, Lexus, and Chrysler.²⁵ The LMB.YourVASurvey.info and LowerMyBills.com websites follow these generally-accepted principles of user interface design, consistent with relevant market leader websites.

48. Generally-accepted principles of user interface design require that, whenever possible, user experience designers make new applications or webpages work in the same way that

²³ Young Report at 9-10.

²⁴ Exhibits 5 and 6.

²⁵ Exhibits 4 and 7.

old applications and webpages worked. This principle encourages predictable and consistent user experience across the Internet.

49. The convention on the World Wide Web, established in the 1990s, is that terms and conditions are accessible via a link at the bottom of a webpage. Thus, while it would be technically possible for a terms and conditions link to appear in a different location, an interested user would be less likely to find them if they were placed in an unconventional location.

50. The 1990s designers who established this convention were relying on design patterns established prior to the electronic age. Just as today's screens are limited in size, so too were the physical pages on which newspapers were printed. Human attention is a limited resource. Thus, it was necessary to give priority to the information deemed a higher priority in order to create a usable newspaper. Editors would place the most important articles on the front page "above the fold" while articles that editors deemed of secondary interest to readers would go "below the fold" or on an interior page. Headlines were in larger fonts than the bulk of the article. Newspaper readers still knew to look for articles "below the fold" or on an interior page.

51. Placing information that is of secondary importance for the typical user lower on a page or on a separate screen, accessible via a hyperlink, is essentially the same idea that was being used by 19th century newspaper editors, translated into HTML.

52. Generally speaking, a consumer's expectations of how a website should work is informed by his or her experience with market leaders. Someone using the web in 2018, for example, would be doing so 23 years after the launch of Amazon.com, more than 20 years after the launch of the Google service, and 14 years after the launch of Facebook. If Amazon, for example, uses a shopping cart and checkout metaphor for online purchases, consumers will look for the same or similar words on other e-commerce sites. If the market leaders put a "home" button

at the top left of the screen and terms and conditions at the bottom, consumers will expect to find those or similar items in the same general areas on less popular sites.

53. This principle is ubiquitous across the web, including mobile websites. For example, when viewed on a mobile device, a price quote service offered by the Kelley Blue Book (“KBB”) (a publisher of car price data since 1926) uses the bulk of the screen space to convey information related to the user’s primary goal, i.e., receiving price quotes on a potential new car purchase. KBB.com follows the Internet-wide convention of providing a terms and conditions link at the bottom of the page. Clicking on this “Terms of Service” link yields multiple pages of additional information that are unlikely to be of primary interest to the typical user when searching for a new car. Those “Terms of Service” include terms that a user would expect to be included in such a link at the bottom of the page. As in this case, one of the provisions in KBB’s “Terms of Service” is that disputes between the user and KBB.com are to be handled by arbitration.²⁶

54. As another example, when registering for an account with Amazon.com from a mobile device, the “Conditions of Use” are available by clicking on a link in smaller font at the bottom of the screen. Through an additional touch on the link, it is possible for the user to view the terms on a mobile browser, which terms also include an arbitration clause.²⁷

55. This principle is explicitly articulated by user interface design professionals. For example, as one user design researcher states:

[W]hen you design with the user’s perspective and cognition in mind, it is important to understand that humans have a strong memory for where things are visually located on the screen. You should leverage this characteristic by reserving

²⁶ Exhibit 4.

²⁷ Exhibit 5.

commonly used locations for various graphical elements such as having the logo on the top left, search field on the top right, exit icon on the top right, etc.²⁸

56. The same idea is explained in more general terms in a standard undergraduate textbook: *Designing the User Interface*, Sixth Edition by Shneiderman, *et al.* Shneiderman describes consistency (including as to website layout) as one of the “Eight Golden Rules of Interface Design.” Shneiderman also identifies “[p]utting information in unexpected places on the page” as a “Top 10 Mistake” for webpage design.

57. A similar perspective is articulated by Adobe, the market leader in software for creative professionals:

People have certain expectations about the apps/websites they use. Designing your product in a way that contradicts a user’s expectations is one of the worst things you can do to a user. It doesn’t matter what logical argument you provide for how something should work or look. If users expect it to work/look a different way, you will face a hard time changing those expectations. If your approach offers no clear advantage, go with what your users expect.

... **Don’t reinvent patterns.** For most design problems, proper solutions already exist. These solutions are called patterns. Popular patterns become conventions and the majority of users are familiar with them. Not taking this solution into account and continuing to design your own solution can lead to challenges for users. In most cases, breaking design conventions results in a frustrating user experience — you’ll face usability problems not necessarily because your solution will be wrong, but because users won’t be familiar with it.

Don’t try to reinvent terminology. Avoid using new terms when there are words available that users already know. Users spend most of their time in other apps and on other sites, so they have certain expectations about naming. Using different words might confuse them.²⁹

²⁸ <https://www.interaction-design.org/literature/article/principle-of-consistency-and-standards-in-user-interface-design>.

²⁹ <https://xd.adobe.com/ideas/process/ui-design/4-golden-rules-ui-design/>.

58. Mr. Young's opinion (at 9) that "[u]sers do not scroll past a natural CTA (call to action) like a submit button" does not make sense in light of the above principle. Any user interested in terms and conditions would scroll to the bottom of a webpage. Mr. Young cites no research to support his opinion, which has been contradicted by leaders in user interface design, web design specifically, and user experience research.

59. For example, in 2017, Google revised its advertisement placement policies after research confirmed that advertisements placed "below the fold" (i.e., in a position requiring scrolling by the user) still achieved a 50% viewability rate. Based on this research, Google removed its prohibition on large advertisements "above the fold," because user experience demonstrated that viewers were in fact likely to scroll down after visiting a website.³⁰

60. As another example, a 2012 comparison test analyzed whether viewers were more or less likely to reach the "call to action" button depending on whether the button was above or below text explaining the benefits of subscribing to the Boston Globe newspaper. There was no difference, regardless of where the button was placed.³¹

61. Similarly, a study of 20,000 user sessions found that 85 percent of them scrolled:

[U]sing custom events from Google Tag Managers scroll depth trigger we analysed over 20,000 sessions across a random selection of clients and we found that 85% of users scrolled past the first viewport, 55% reached half way down the page and 45% scrolled to the bottom of the page. The statistics reaffirmed our initial thoughts that a high percentage of users scroll past the first viewport, but even more interesting when a user scrolls half way down the page, over 80% scrolled to the bottom.³²

³⁰ <https://techcrunch.com/2017/05/02/google-will-now-allow-300x250-ads-above-the-fold-on-mobile-webpages-says-they-can-be-user-friendly/>

³¹ <https://marketingexperiments.com/conversion-marketing/below-the-fold-boston-globe-test>

³² <https://sculpt.digital/85-users-scroll-death-of-above-the-fold-content/>

62. The designers of LMB.YourVASurvey.info and LowerMyBills.com thus followed generally-accepted design principles and anticipated typical user interaction with respect to the placement of the terms and conditions and “Terms of Use” link near the submission button. The location of the terms and conditions and surrounding text—including sufficient (but not complete) visibility when the page first loads—were consistent with the placement of similar text by market leaders in e-commerce and web publishing in general.³³ As such, the placement of that text in smaller font at the bottom of the webpage near the submission button is consistent with the expectations of the average site visitor.

63. Mr. Young also identifies (at 9) what he believes to be the “[b]est practice with regards to confirming a site visitor has consented to terms.” Mr. Young says that a checkbox should be required to ensure that a user has consented to terms and conditions. But this is contrary to webpage design convention, and market leaders such as Amazon and Facebook disagree.³⁴ It is customary to allow users to submit their information or register on a website without seeing the complete terms and conditions or clicking any kind of checkbox. Many major car manufacturers follow these standard conventions for their websites where consumers submit their personal information for the purpose of obtaining additional information when researching purchasing an automobile.³⁵ Even if such a checkbox were required, I am aware of no studies (and Mr. Young cites none)³⁶ that would suggest the user is any more likely to click on a hyperlink among the terms and conditions and review every provision of those terms because of a checkbox.

³³ *E.g.* Exhibits 4 and 7.

³⁴ Exhibits 5 and 6.

³⁵ Exhibit 7.

³⁶ *See* Young Report at 9.

64. Mr. Young also opines (at 9) that “[a] common additional best practice is to disallow the submission of forms where the user has disabled any JavaScript code in their browser” He does not say whether LMB.YourVASurvey.info adheres to this practice. Using a Google Chrome browser window in which JavaScript has been disabled, I confirmed that the LMB.YourVASurvey.info website adheres to this practice (i.e., it is impossible to proceed from “card” to “card” within the single-page application with JavaScript disabled).

65. The other supposed “best practices” described by Mr. Young are simply too vague to offer meaningful guidance. Mr. Young asserts (at 9) that terms must be presented “using a font size that is readable as well as a font to background color that has sufficient contrast to be visible.” Mr. Young offers no opinion at all about what font size would be “readable” and how much contrast is “sufficient.”³⁷ Nor does he opine on whether these supposed standards have been met on either LMB.YourVASurvey.info or LowerMyBills.com.³⁸ The font size and color contrast used by LMB.YourVASurvey.info is consistent with other prominent websites.³⁹ In my opinion, the font size is readable and the contrast of the font is sufficient to be visible on both the LMB.YourVASurvey.info and LowerMyBills.com websites.⁴⁰

VI. THE YOUNG REPORT OFFERS NO RELIABLE EVIDENCE THAT MS. HILL DID NOT CLICK THE “SEE MY RESULTS!” BUTTON

66. Mr. Young opines (at 11) that he “can conclude with technical certainty and using multiple sets of evidence that Hill did not click the ‘See my Results!’ submit button on the

³⁷ See Young Report at 9.

³⁸ *Id.*

³⁹ See, e.g., Exhibit 7.

⁴⁰ See, e.g., Young Exhibits N and Q.

Webpage.” In fact, in my opinion, the evidence cited in Mr. Young’s report indicates that Ms. Hill did click the “See my results!” button on the LMB.YourVASurvey.info website.

67. Mr. Young (at 10) states that the code for the current version of the website (Young Exhibit U) “submits data on actions not associated to the site visitor clicking the ‘See my results!’ button.” Although this statement is unclear, it is possible that Mr. Young is speculating that Ms. Hill’s phone number was transmitted to a Suited Connector server without Ms. Hill ever touching the final submission button. However, Mr. Young does not provide any analysis that LMB.YourVASurvey.info site breaks established convention by sending form data even when a user has abandoned the form and not clicked the submission button. Based on my experience operating websites since 1993, this would be an expensive and burdensome way to do business (and highly unusual) because it would lead to a lot of user confusion. One does not need to speculate, however, as the current live site can be tested.

68. Mr. Young is correct in noting that there is a “submit” button on the submission page of the LMB.YourVASurvey.info data entry form. Mr. Young also states that he reviewed the JavaScript code used to submit the form data, but he does not explain how the “submitFormData” function “submits data on actions not associated to the site visitor clicking the ‘See my results’ button.”⁴¹

69. My review of the JavaScript code sent to the browser by the current LMB.YourVASurvey.info site, combined with analysis of the network requests sent by the running JavaScript programs, did not uncover anything to suggest that Ms. Hill did not click the final submit button. To summarize the code analysis set forth in detail in the attached Technical Appendix A (at 12-13), the combined.js file contains a doPayable function that is associated with

⁴¹ Young Report at 10 & Young Exhibit U.

the submit button. When the button is clicked on a mobile device, the doPayable function is run by the browser, which calls the submitFormData function (depicted in Mr. Young's Exhibit U) and results in the data entered on the submission form being transmitted. Using the Google Chrome developer tools, which enable the monitoring of network traffic, and following the page flow shown in the video replays that have been produced in this case (but with my own personal information rather than Ms. Hill's), I observed that the message from the submitFormData function was sent only after I clicked on the "See my results!" button and at no time prior.

70. In addition to doing the kind of analysis that Mr. Young did, I also reviewed a version of the LMB.YourVASurvey.info website HTML, CSS, and JavaScript code from October 12, 2018.⁴² Larry Smith, who I understand is the Chief Technology Officer of Suited Connector, stated that he retrieved this from Suited Connector's version control system.⁴³ I did not find anything in this code to suggest that the site operated in October 2018 in a manner that would have resulted in the transmission of Ms. Hill's phone number, for example, if she had taken all of the steps shown in Exhibit 10, but not clicked the final submit button.

71. Mr. Smith, who created the back-end software to which the LMB.YourVASurvey.info site sends data, confirmed that the lead-gathering database does not receive the user's contact information until the final submit button is clicked.

72. Mr. Young notes that the Active Prospect video playback of Ms. Hill's visit to LMB.YourVASurvey.info does not include the "Thank You" page that she would have seen after

⁴² See Exhibit 9.

⁴³ It is conventional for companies to run software that keeps track of older versions of software. On my personal site, for example, I run the "git" version control system and can retrieve the contents of the site as of any specific date.

clicking the “See my results!” button. He uses this as “evidence” bolstering a conclusion with “technical certainty” that Ms. Hill did not, in fact, click the button.⁴⁴

73. The first problem with this leap to a conclusion is that Mr. Young appears to have ignored the best evidence regarding how the Active Prospect third-party video replay service works: the documentation that this company supplies to web publishers and programmers about its service. For example, Active Prospect explains that the script stops recording when the final submit button is pressed:

TrustedForm stops recording once the web form submits executes and the page is redirected/refreshed. This typically occurs when a user clicks the ‘submit’ button after entering the required information into the form. TrustedForm users cannot adjust this behavior and therefore cannot change when the TrustedForm video stops recording prior to the form submission.⁴⁵

74. The absence of the “Thank You” page in the Active Prospect video reconstruction is expected and consistent with how the service is supposed to function. It is in no way suggestive that Ms. Hill did not click the “See my results!” button as Mr. Young incorrectly concludes.

75. Second, Mr. Young compares (a) the Jornaya video playback of Ms. Hill’s visit to LMB.YourVASurvey.info, against (b) the Jornaya video playback of Ms. Hill’s visit to LowerMyBills.com.⁴⁶ The Jornaya video of her LMB.YourVASurvey.info visit does not display a final Thank You page.⁴⁷ The Jornaya video of Ms. Hill’s LowerMyBills.com, on the other hand, ends by showing that website’s final Thank You page.⁴⁸

⁴⁴ Young Report at 10-11.

⁴⁵ Exhibit 8 (<https://support.activeprospect.com/hc/en-us/articles/202917569-TrustedForm-s-snapshot-and-video-replay>, last visited on February 18, 2020).

⁴⁶ Young at 11.

⁴⁷ Young at 11; Wald Declaration Ex. A.

⁴⁸ Young at 11; Wald Declaration Ex. B.

76. Mr. Young asserts (at 11) that “there would be no reason why the two Jornaya videos would not be consistent” and that “what one would expect to see at the end of both of these videos is the ‘Thank You’ page as shown in Exhibit V.” This premise is false, however, because as noted above, the LMB.YourVASurvey.info page is a single-page application *except for* the Thank You page. Mr. Young’s report confirms this (at 10), by noting that the user is directed to a separate “thankyou.html” page as soon as the “See my results!” button is pressed at the end of the form. This terminates any JavaScript being run on the form. The expectation would therefore be that any video replay built from data submitted by that JavaScript program will likewise terminate prior to the user seeing a Thank You page. An examination of the HTML and JavaScript for the two websites confirms that structural differences explain the absence of the “Thank You” page for the LMB.YourVASurvey.info Jornaya video.⁴⁹

77. Based on my testing, the LowerMyBills.com page has a different technical structure than the LMB.YourVASurvey.info page. This makes practical sense, given my understanding that the site was built and is operated by an entirely separate company and programming team. LowerMyBills.com is a single-page application *including* the confirmation page. Thus, the execution of a Jornaya JavaScript on LowerMyBills.com would *include* the confirmation page, while a similar execution on LMB.YourVASurvey.info would not. It is unclear why Mr. Young ever expected video replays from these two sites to be comparable; the two different websites are operated by two different companies, and thus were programmed and coded differently. However, even if he didn’t know that, an inspection of the HTML and JavaScript shows that it does not make sense to compare video replays from the two sites.

⁴⁹ See Technical Appendix A.

78. In my opinion, the Young Report contains nothing to indicate that Ms. Hill did not click the “See my results!” button when she visited the LMB.YourVASurvey.info website.

VII. CONCLUSIONS

79. The most obvious explanation for how Ms. Hill’s phone number having ended up in the database back-end of the LMB.YourVASurvey.info website is that she typed the phone number into the form and clicked the “See my results!” button. I have not seen anything in the video replays that suggests an alternative explanation. I have not seen anything in the software from October 2018 or the current version of the LMB.YourVASurvey.info HTML and JavaScript to suggest otherwise. The Young Report’s conclusion with “technical certainty” is not supported by technical analysis and is contradicted by a third-party compliance vendor’s documentation as well as a basic understanding of how web browsers function.

80. Based on my review of the records, data, websites and own testing, the most reasonable conclusion is that Ms. Hill was presented with terms and conditions—including the “Terms of Use” link—at the bottom of the two websites that the parties agree she visited, and that these terms were presented in an industry-standard location with a comparable level of visibility to what is used by market-leading sites. Mr. Young himself opines (in Young Exhibit N) that Ms. Hill would have seen the “Terms of Use” hyperlink during her visit to the LMB.YourVASurvey.info site. Mr. Young’s attempted re-creation confirms that at least the beginning of these terms and conditions would have been visible even without scrolling as Ms. Hill progressed through the form.

81. Mr. Young’s statements about the “best practices” for any website that accepts user data via form submission are inconsistent with how market-leading sites such as Amazon.com are

designed. These statements are also inconsistent with the actual design of numerous lead-generation websites in the automotive market, e.g., from Chrysler, Toyota, and KBB.

A handwritten signature in cursive script that reads "Philip Greenspun". The signature is written in black ink on a light background. Below the signature is a solid horizontal line.

Philip Greenspun